



City of Costa Mesa Building Division
PERMIT PROCESSING CENTER
SUBMITTAL APPLICATION & REQUIREMENTS
Single Family Dwelling Solar Permit

Project Address: _____ **Suite/Unit:** _____

Activity Number: _____ **Received By:** _____

Homeowner Association? ☐ YES (Approval letter from HOA required) ☐ NO

Owner Occupied? ☐ YES ☐ NO

Description of work to be performed: (please be specific):

☐ Single Story PV Area _____ Square Footage ☐ Two Story PV Area _____ Square Footage

System Capacity: _____ Kilowatts **Valuation:** _____

Owner: _____ **Phone No.:** _____

Address: _____ **Suite/Unit:** _____

City: _____ **State:** _____ **Zip:** _____

Applicant/Agent: _____ **Phone No.:** _____

Address: _____ **Suite/Unit:** _____

City: _____ **State:** _____ **Zip:** _____

Architect/Eng.: _____ **Reg. No.:** _____ **Phone No.:** _____

Address: _____ **Suite/Unit:** _____

City: _____ **State:** _____ **Zip:** _____

Contractor: _____ **Phone No.:** _____

Address: _____ **Suite/Unit:** _____

City: _____ **State:** _____ **Zip:** _____

State License No.: _____ **Class** _____ **Expiration:** _____

Workman's Comp. Policy No.: _____ **Expiration:** _____

Insurance Company: _____ **City Business License Number:** _____

SOLAR PHOTO-VOLTAIC SYSTEM OVER SINGLE FAMILY DWELLING

SUBMITTAL REQUIREMENTS

Administrative

1. Provide 2 sets of plans minimum sheet size 11" x 17".
2. Attach all manufacturer specification sheets, installation instructions and U.L. listings to the plans
3. Plans are to be signed by State of California licensed contractor with any of the following classifications "A", "B", "C-46", "C-10", or licensed electrical engineer. Provide signature and contractor license number on each sheet.

Roof Plan

1. Provide a roof plan projected on a site plan. Show the location and dimensions of all solar voltaic equipment and PV arrays.
2. Provide typical 3 foot clear access per examples 1 – 4.
3. Provide a partial roof framing plan. Show new and existing supporting rafters, beams and headers include rafter size, span, and spacing. Identify roof sheathing and roofing materials

ALTERNATE: Framing information is not required if arrays are supported at a maximum spacing of 4 feet.

4. Detail equipment support connections to roof. Provide a detail for flashing and water proofing at system supports
5. Provide calculations by a licensed professional engineer or architect to verify supporting members are adequate for existing and proposed loads

ALTERNATE: Calculation not required if arrays are supported at a maximum spacing of 4 feet.

6. Provide lateral calculations by a licensed professional engineer or architect per 2010 CBC showing that affected existing lateral resisting elements are no more than 10% overstressed according to the 2010 CBC.

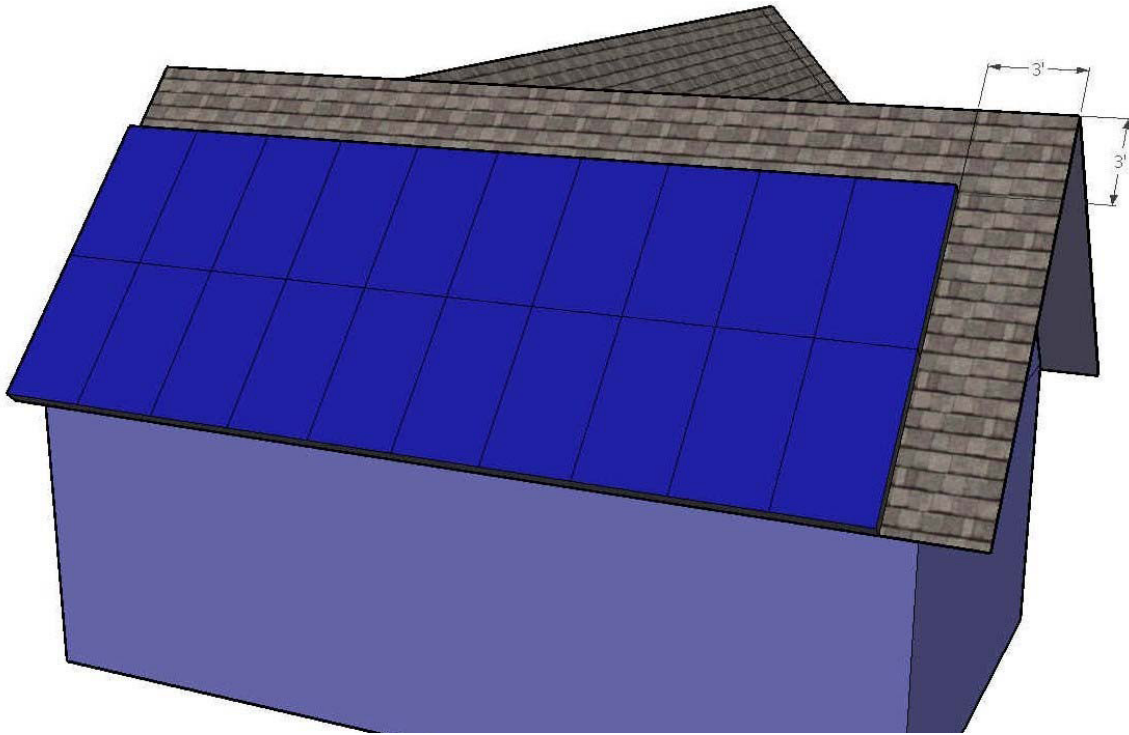
ALTERNATE: Lateral Analysis is not required if total area of arrays is less than 300 square feet over a second story roof or 400 square feet over a first story roof

Electrical

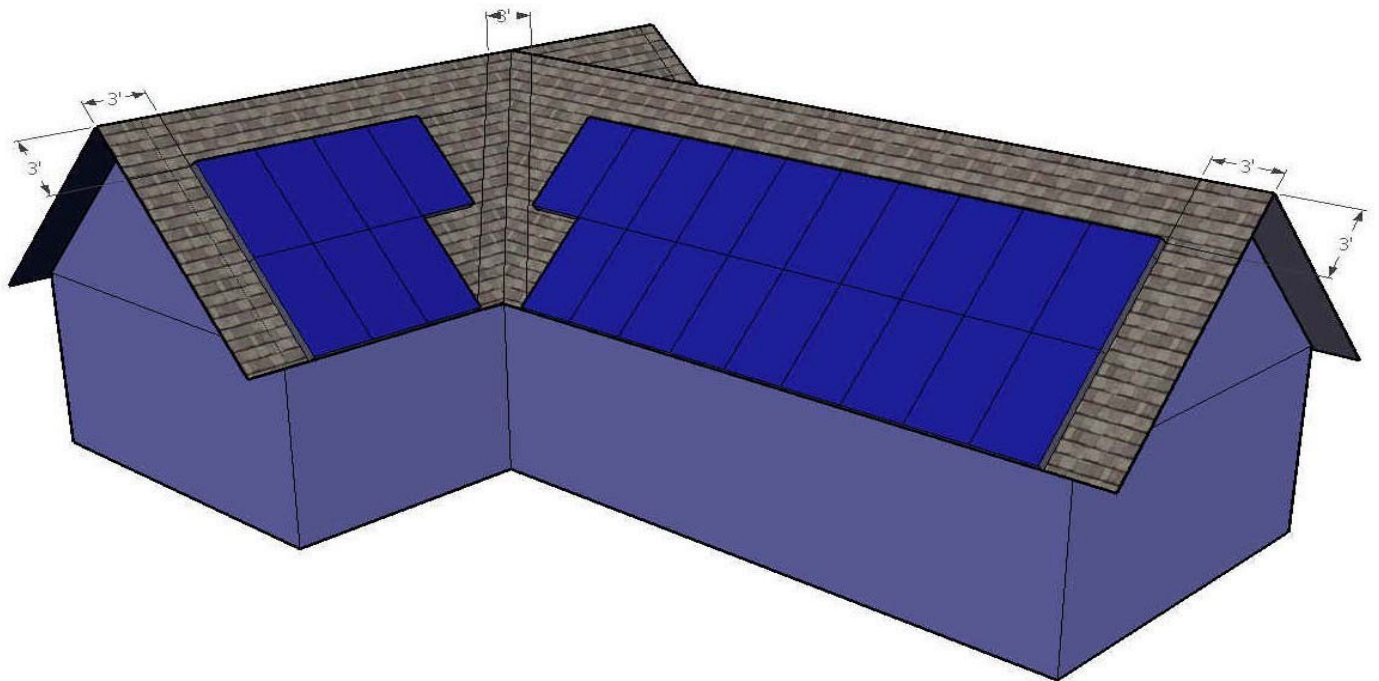
1. Provide Electrical drawings to show compliance with the applicable provisions of the 2010 California Electrical Code.
2. Show the location and size of the main electrical service, AC/DC disconnects, all solar voltaic equipment, and PV arrays on the roof plan.
3. New back fed P.V beaker shall be positioned at opposite end of main breaker per CEC Art. 690.64 B7 (New 2010 CEC requirement), when using the 120% of rating allowance for determining the total rating of over current device. [CEC 690.64(B)(2)].
4. When selecting the back feed P.V breaker. Please, use size per CEC article 240.4 (B) and 240.6. **Use the next HIGHER standard value of breaker, and it must not exceed the maximum ac output over-current protective device shown in the inverter manufacturers specifications.**
5. Account for the voltage correction factors for Crystalline and Multi-crystalline Silicon Modules (CEC Table 690.7 and Article 690.7), or use the open - circuit voltage temperature coefficients when supplied by the modules' manufacturer. Show where did you account for this factor in your inverter sizing? (690.7 is a inverter safety requirement).
6. Specify the solar modules' grounding lugs' manufacturer's name, model #, and UL approval report number on plans. (CEC 690.43,690.45, 690.48, 250.122, and 250.136).
7. Single Line Diagram: show array configuration, conduit and conductors sizes with derating calculations.
8. Inverter Information: show model number, specification cut sheets and maximum D.C. input
9. PV Module Information: show open circuit voltage (VOC), short – circuit current (ISC) max series fuse
10. Array Information: show number of modules in series, number of parallel source circuits

11. Wiring and Over Current Protection: show conductor ampacities, adjusted with all derating factors show rating and location of all Over Current Devices (OCD)
12. System Labels and Warnings: show required signage on the plans per 2010 CEC-Article 690
13. Grounding Details: show equipment ground conductor, ground electrode conductor from inverter to ground rod or ufer ground
14. Disconnects: show AC/DC disconnects at inverter. DC disconnect required prior to DC array conductors penetrating the surface of the roof or entering the building
15. System Calculations: show (VOC) calculated 1.13 (temperature correction factor for City of Costa Mesa (ISC) calculated x 1.25% (NEC 690) x 1.25% (UL 1703)
16. All PV equipment shall be listed by a recognized test lab
17. Notify serving utility before activation of PV system

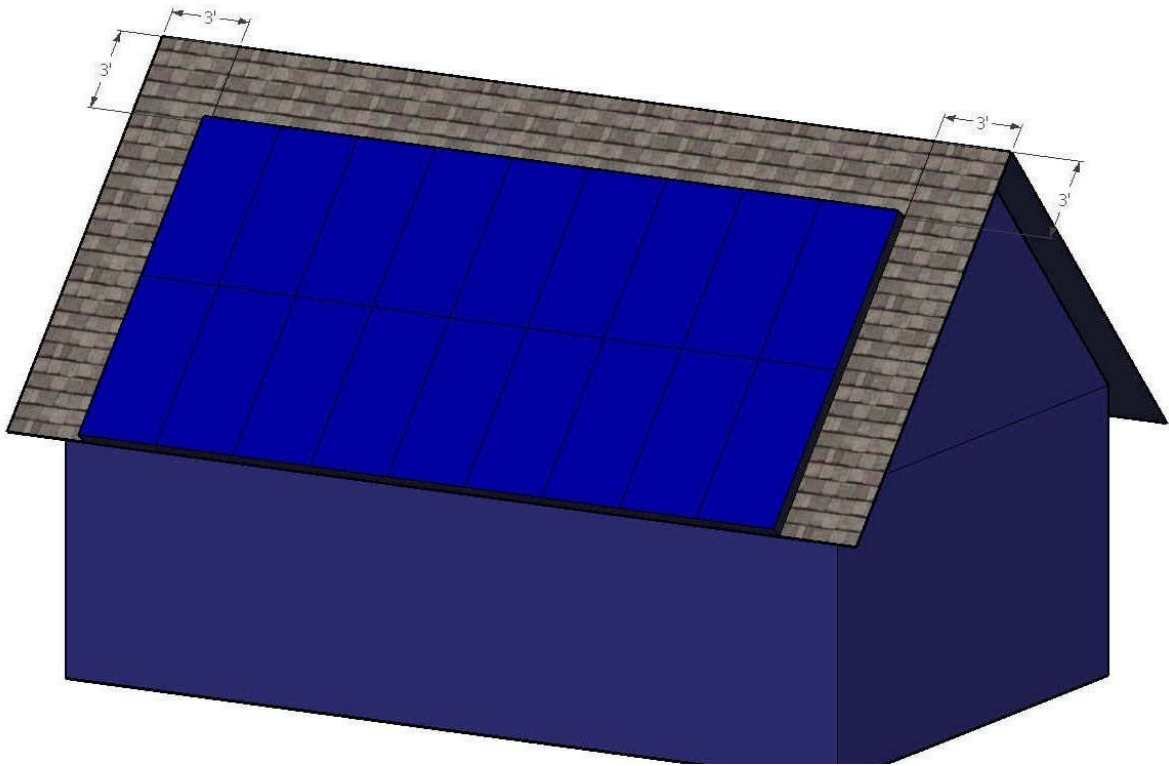
EXAMPLE 1 Cross Gable Roof



EXAMPLE 2 Cross Gable with Valley



EXAMPLE 3: Full Gable



Example 4: Full Hip Roof

